

REMARKS

Reconsideration and allowance of the subject application are respectfully requested. By this Amendment, Applicant has added new claim 12. Thus, claims 1-12 are now pending in the application. In response to the Office Action (Paper No. 3), Applicant respectfully submits the pending claims define patentable subject matter.

I. Preliminary Matters

The Office Action Summary did not indicate whether the drawings submitted on August 2, 2001 are approved. Applicant requests that the Examiner indicate that the drawings are approved in the next action.

Claim 6 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite because the Examiner asserts that the phrase "almost the same" is unclear and vague. By this Amendment, Applicant has amended claim 6, as well as claims 1, 2, 6 and 8, to improve clarity. Accordingly, the Examiner is requested to remove the § 112, second paragraph, rejection.

II. The Present Invention

The present invention is directed to a display control device for a vehicle. As shown in Figure 1, the display control device comprises a car mount electronic unit 12 which includes a warning control unit 1, an air conditioner control unit 3, a meter control unit 5, an engine system and mission system control unit 7, an air bag control unit 9, and a runaway monitoring circuit 11. The control units of the electronic unit 12 output to an interface circuit 13 alarm signals DSP1-DSP5 including character and image data.

The runaway monitoring circuit 11 is composed of a watch dog timer, and judges whether a program is normally operated in a graphic circuit 15 by two methods of whether a clock pulse of a constant period is supplied from the graphic circuit 15, or a an answer back is supplied from the graphic circuit 15 within a predetermined time. When a the runaway monitoring circuit 15 judges the graphic circuit 15 is in abnormal condition due to a runaway, or breaking of wire, and a reset signal is supplied from the runaway monitoring circuit 15 to a reset terminal RST of the graphic circuit 15. Further, the runaway monitoring circuit 11 supplies the switching signal to the switching circuit 14 which will be described later, after a predetermined time later from the output of the reset signal, that is, after waiting until the graphic circuit 15 is perfectly in reset condition.

An interface circuit 13 receives the signals DSP 1 - DSP 5 showing each kind of images, and characters from respective warning control unit 1, air conditioner control unit 3, meter control unit 5, engine system and mission system control unit 7, air bag control unit 9. When it is judged that the signal is newly supplied, the newly supplied character and image signal DSP 1 - DSP 4 or DSP 5 is inputted, and it is parallely supplied to the switching circuit 14 and the graphic circuit 15.

When the supply of clock pulse 15 from the graphic circuit 15 is received by the runaway monitoring circuit 11, and when it is judged to be normal, the switching circuit 14 supplies the output of the graphic circuit 15 to the display unit 20. The interface circuit 13 starts the reading of the input terminals by scanning by the multiplexer function in the regular order, and judges the existence of the input of the character image data. For example, initially, when the character and image data DSP 1 for warning display from the warning control unit 1 is read out, the data is parallely outputted to both of the graphic circuit 15 and switching circuit 14. In this case,

because the contact points A and C of the switching circuit 14 are connected to each other, this data is read out by the graphic circuit 15 and an increase of the resolving power and the number of colors, and the image arrangement corresponding to it, are conducted, and it is supplied to the display unit 20 through the switching circuit 14. As a result, the display is conducted with the high quality.

In the case where the software operated in the graphic circuit is run away, or the circuit wire is broken in the hardware, when the runaway monitoring circuit 11 can not supply the clock pulse with a predetermined period, or the answer back signal can not be returned to the requiring signal supplied from the runaway monitoring circuit 11 to the communication function 15c for each predetermined period, the runaway monitoring circuit 11 supplies the reset signal to the reset terminal RST of the graphic circuit 15. After a predetermined time period, the runaway monitoring circuit 11 supplies the switching signal to the switching circuit 14, and the connection status of the contact points A and C is switched to the connection of the contact points A and B. When the character and image data for display is supplied from the car mount electronic unit 12 to the interface circuit 13, for example, the character and image data DSP1 for warning display shown in Fig. 3, which is outputted from the interface circuit 13, is displayed on the display unit 20.

III. Prior Art Rejection

A. Disclosure of Strait et al.

Strait et al. (U.S. Patent No. 3,964,018; hereafter "Strait") is directed to a vehicle monitoring system with fault override. The vehicle monitoring system sequentially monitors a plurality of conditions of vehicle sensors for oil, water, air pressures, temperatures and the like. The system includes sequencing means for sequentially sampling data from each of the plurality of sensors and comparing the sensed data with programmed stored parameter limits representative of fault conditions for each parameter sensed. The system includes means for selecting an individual parameter for continuous display and an override circuit for displaying a non-elected parameter if it reaches a programmed limit. Also, a plurality of operator display select switches are provided and are illuminated such that in the event a detected parameter reaches a stored limit, the select switch associated with that parameter flashes in different colors indicating a warning or an alarm fault condition. In the event the parameter is critical to the operation of the vehicle, a shutdown circuit is provided for terminating the operation of the vehicle by shutting the engine down either immediately or after a predetermined delay.

B. Analysis

Claims 1-11 are rejected under 35 U.S.C. § 102(b) as being anticipated by Strait. Applicant respectfully submits the claimed invention would not have been anticipated by or rendered obvious in view of Strait. In particular, Applicant respectfully submits that it is quite clear that Strait does not teach or suggest a signal switching section for outputting the display signal from

the second display control section on to the display section at the normal time, the signal switching section for outputting the display signal from the first display control section onto the display section when an abnormal condition of the second display control section is detected, as required by independent claim 1.

The Examiner generally alleges that Strait (Figure 1) discloses the claimed first and second display control sections via the digital scaler 25, the fault limit/digital scaler encode circuit 2, the fault monitor display lamp control circuit 40 and the no data generator 44. Further, the Examiner alleges that Strait discloses the claimed signal switching section via the select display gate control circuit 42. However, nowhere does Strait teach or suggest switching display signals when an abnormal condition is detected in any of the digital scaler 25, the fault limit/digital scaler encode circuit 2, the fault monitor display lamp control circuit 40 and the no data generator 44. That is, Strait does not teach or suggest monitoring the condition of any of the digital scaler 25, the fault limit/digital scaler encode circuit 2, the fault monitor display lamp control circuit 40 and the no data generator 44.

Accordingly, Applicant respectfully submits independent claim 1, as well as dependent claims 2-11, should be allowable because the applied reference does not teach or suggest all of the features of the claims.

By this Amendment, Applicant has added new independent claim 12 in order to further define the claimed invention. Applicant respectfully submits that claim 12 should be allowable for the same reasons as claim 1 since Strait does not teach or suggest the claimed signal switching section. Further, Applicant submits Strait does not teach or suggest "the first and

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Patent Application No. 09/919,808

second display signals comprise image data regarding the vehicle condition, and the image data of the display signal from the first display control section has a lower resolution than the image data of the display signal from the second display control section", as claimed.

IV. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



Christopher R. Lipp
Registration No. 41,157

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE

23373

CUSTOMER NUMBER

Date: October 2, 2003

Attorney Docket No.: Q65683